

(11) **EP 4 373 027 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 27.11.2024 Bulletin 2024/48

(43) Date of publication A2: 22.05.2024 Bulletin 2024/21

(21) Application number: 24168117.0

(22) Date of filing: 25.06.2021

(51) International Patent Classification (IPC):

H04B 7/06 (2006.01) H04W 72/04 (2023.01) H04B 7/04056 (2017.01) H04B 7/0406 (2017.01) H04L 5/00 (2006.01)

(52) Cooperative Patent Classification (CPC):

H04B 7/0404; H04B 7/0465; H04B 7/0695; H04B 7/06956; H04B 7/06964; H04B 7/06968; H04L 5/0023; H04L 5/0048; H04L 5/0053; H04L 5/0094; H04L 5/005; H04L 5/0055

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: 26.06.2020 US 202063044838 P 16.07.2020 US 202063052830 P 16.06.2021 US 202117349680

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 21829139.1 / 4 140 058

(71) Applicant: Samsung Electronics Co., Ltd. Suwon-si, Gyeonggi-do 16677 (KR)

(72) Inventors:

Rahman, Md. Saifur
 16677 Suwon-si, Gyeonggi-do (KR)

 Onggosanusi, Eko 16677 Suwon-si, Gyeonggi-do (KR)

 Farag, Emad Nader 16677 Suwon-si, Gyeonggi-do (KR)

(74) Representative: Gulde & Partner
Patent- und Rechtsanwaltskanzlei mbB
Wallstraße 58/59
10179 Berlin (DE)

(54) METHOD AND APPARATUS FOR EVENT-BASED UPLINK TRANSMIT BEAM SWITCH

(57) A method for operating a user equipment comprises receiving configuration information including information on a beam indication indicating N uplink (UL) transmit beams, where N > 1, receiving the beam indication, determining whether an event is detected, select-

ing a beam from the N UL transmit beams based on whether the event is detected or not, and transmitting an UL transmission using the selected beam, wherein the beam refers to a spatial property used to receive or transmit a source reference signal (RS).



PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention. This report shall be considered, for the purposes of subsequent proceedings, as the European search report

EP 24 16 8117

| - 1 | | ERED TO BE RELEVANT | | | |
|--------------------------------|---|---|---|---|--|
| Category | Citation of document with i of relevant pass | ndication, where appropriate, sages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) | |
| х | AL) 18 June 2020 (2 | , [0234], [0244], | 1-15 | INV. H04B7/06 H04B7/0408 H04W72/04 | |
| x | AL) 7 May 2020 (202 | (MARINIER PAUL [CA] ET 20-05-07) , [0182], [0183], [0198], [0225], paragraphs [0231], | 1-15 | H04B7/0404 H04B7/0456 H04L5/00 | |
| | | | | TECHNICAL FIELDS SEARCHED (IPC) | |
| | | | | н04в | |
| INCOL | MPLETE SEARCH | | | _ | |
| not compl | y with the EPC so that only a partial sarched completely: | application, or one or more of its claims, do search (R.62a, 63) has been carried out. | es/do | | |
| | arched incompletely : it searched : | | | | |
| Reason fo | or the limitation of the search: | | | | |
| see | sheet C | | | | |
| | Place of search | Date of completion of the search | | Examiner | |
| | Munich | 18 October 2024 | Dar | nahandeh, Ali | |
| X : parti Y : parti docu | ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone cularly relevant if combined with anounent of the same category | T: theory or princip E: earlier patent d after the filing d ther D: document cited | T: theory or principle underlying the invention E: earlier patent document, but publishes after the filling date D: document cited in the application L: document cited for other reasons | | |
| A : tech O : non | nological background -written disclosure mediate document | y, corresponding | | | |



INCOMPLETE SEARCH SHEET C

Application Number EP 24 16 8117

5

Claim(s) completely searchable: 10 Claim(s) searched incompletely: 1-15 Reason for the limitation of the search: 15 The subject-matter of claims 1-15 extends to such an extent beyond the content of the parent application as filed (Article 76(1) EPC) that a meaningful search of these claims is not possible. Therefore, the search is based on the embodiment of the description of the parent application as filed which, based on the response of the applicant to the request for clarification, the examining division 20 considers as the closest to the subject matter of claim 1 namely paragraph 199 of the parent application as filed. 25 30 35 40 45 50 55

EP 4 373 027 A3

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 24 16 8117

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

18-10-2024

| 10 | | | Patent document ed in search report | | Publication date | | Patent family member(s) | | Publication date |
|----|------------|----|--|-----------|------------------|---------------|-------------------------|-----------|------------------|
| | | US | 2020196383 | A1 | 18-06-2020 | CN | 111327411 | | 23-06-2020 |
| | | | | | | \mathbf{EP} | 3667943 | | 17-06-2020 |
| 15 | | | | | | ES | 2874480 | | 05-11-2021 |
| 15 | | | | | | KR | 20200074876 | | 25-06-2020 |
| | | | | | | US | 2020196383 | | 18-06-2020 |
| | | | | | | US | 2021105860 | A1 | 08-04-2021 |
| | | US | 2020145079 | A1 | 07-05-2020 | CN | 109155659 | | 04-01-2019 |
| 20 | | | | | | CN | 114710189 | | 05-07-2022 |
| | | | | | | \mathbf{EP} | 3455956 | | 20-03-2019 |
| | | | | | | \mathbf{EP} | 4333515 | | 06-03-2024 |
| | | | | | | $_{ m IL}$ | 262783 | | 28-02-2019 |
| | | | | | | JP | 7300833 | | 30-06-2023 |
| 25 | | | | | | JP | 2019521548 | | 25-07-2019 |
| 20 | | | | | | JP | 2023071667 | | 23-05-2023 |
| | | | | | | KR | 20190016944 | | 19-02-2019 |
| | | | | | | KR | 20210125598 | | 18-10-2021 |
| | | | | | | MY | 191809 | | 16-07-2022 |
| | | | | | | US | 2020145079 | | 07-05-2020 |
| 30 | | | | | | US | 2022116097 | A1 | 14-04-2022 |
| | | | | | | US | 2023198598 | | 22-06-2023 |
| | | | | | | WO | 2017196612 | A1 | 16-11-2017 |
| 35 | | | | | | | | | |
| | | | | | | | | | |
| 40 | | | | | | | | | |
| 70 | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 45 | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 50 | | | | | | | | | |
| 50 | | | | | | | | | |
| | g | | | | | | | | |
| | FORM P0459 | | | | | | | | |
| 55 | ORM | | | | | | | | |

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82